

Work Order ID 146023***146023***

Page 1

Tuesday, June 07, 2016 8:10:23 AM

Item ID: D4150-3

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Arm Plate

Start Date: 5/4/2016 Start Qty: 24.00

24

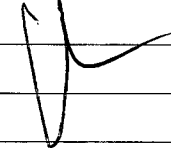
Cust Item ID:

Required Date: 5/5/2016 Req'd Qty: 24.00

24

Customer:

Reference:

Approvals: Process Plan:  Date: _____ Tooling: _____ Date: _____Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D4150

B

105

0.00

105

Purchasing

Purchasing

S.⁰⁰

Memo

ISSUE PO 32646
CUT PER DRWG D4150 REV.B

0.00

24

JUN 08 2016

PAS
13
9-89

115

Receive & Inspect for Damage & Mat'l Certs

0.00

115

Packaging

Packaging

Memo

0.00

24x SP/6-6-21

125

QC6- Inspect dimensions to drawing

0.00

125

QC

Quality Control

Memo

0.00

(24)

PAS
38
9-89

JUN 22 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐							
Misidentified ☐	Past Due ☐								

Work Order ID 146023

Tuesday, June 07, 2016 8:10:23 AM

146023

Page 2

Item ID: D4150-3

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Arm Plate

Start Date: 5/4/2016 Start Qty: 24.00

24

Cust Item ID:

Required Date: 5/5/2016 Req'd Qty: 24.00

24

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Identify as per dwg & Stock Location: <u>St087</u>	0.00							
150									
Packaging	Memo	0.24				<u>24</u>		<u>JUN 23 2016</u>	<u>246</u> <u>9-89</u>
Packaging									
160	QC21- Final Inspection - Work Order Release	0.00							
160									
QC	Memo	2.40						<u>DAS</u> <u>21</u> <u>9-89</u>	<u>JUN 24 2016</u>
Quality Control									

MCS JUN 24 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

Picklist Print

Tuesday, June 07, 2016 8:10:22 AM

Page 1

Work Order ID: 146023

146023

Parent Item: D4150-3

D4150-3

Parent Item Name: Arm Plate

Start Date: 5/4/2016

Required Date: 5/5/2016

Start Qty: 24.00

Required Qty: 24.00

Comments: IPP Rev:A 10.06.24 new issue DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4150-3P		Purchased	No				Each	0.0000		24			
D4150-3P									**				
Arm Plate													
M304S11GA		Purchased	No			100	sf	107.2349	0.0254	0.641683			
M304S11GA									**				
304/316 0.125 Sheet													

24x 8P/6-6-21

JUN 24 2016

DAS
13
9-89

Location	Loc Qty	Loc Code
MAT020	80.99998	
M129545	31.99998	
M129972	23.5	
M134284	25.5	
TPI	26.234932	
M134604	26.234932	

DQA: _____ Date: _____

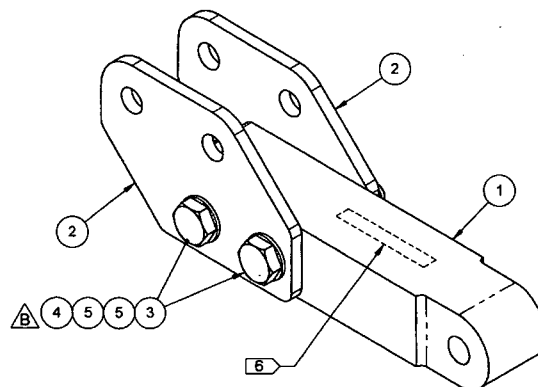
**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY			
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong		
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions		
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance		
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect		
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing		
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved		
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing		
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish		
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread		
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence		
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____					
Misidentified ☐	☐ Past Due						



D4150-041 ATTACHMENT ARM ASSY

ITEM	QTY	P/N	DESCRIPTION
	X	D4150-041	ATTACHMENT ARM ASSY
1	1	D4150-1	ARM
2	2	D4150-3	ARM PLATE
3	1	AN3C13A	BOLT
4	1	MS21043-3	NUT
5	2	NAS1149C0332R	WASHER

RELEASED
2010-07-16

- NOTES:**
 1) MATERIAL: N/A
 2) FINISH: NONE
 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 5) BREAK SHARP EDGES: N/A
 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4150-041" USING FINE POINT PERMANENT INK MARKER
 7) WEIGHT: 0.82 lbs

B	REPLACED QTY(3) MS20615-4M20 WITH QTY(2) EACH AN3C13A, MS21043-3 AND QTY(4) NAS1149C0332R WASHER (ZN D3-1); Ø0.191 2 PL REPLACES Ø0.129 3 PL (ZN C6-2, C7-2, B4-3 & B5-3). REASON: SEE TR-D350-507-2 REV. B.	MB	10.07.08
A	NEW ISSUE	MB	10.06.18
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	10.07.08		

DART AEROSPACE LTD
 HAWKESBURY, ONTARIO, CANADA

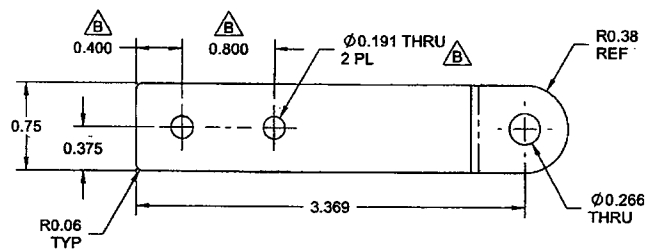
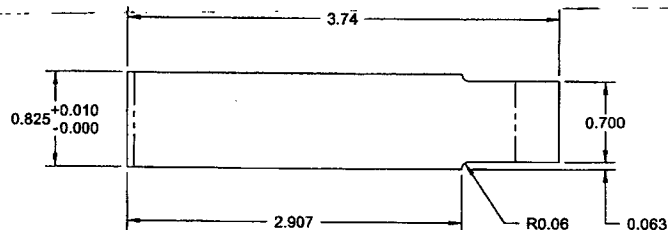
DRAWING NO. **D4150** REV. B
 SHEET 1 OF 3

TITLE **ATTACHMENT ARM ASSY** SCALE NTS

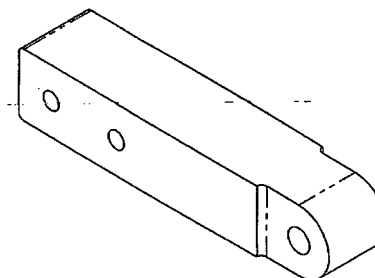
COPYRIGHT © 2010 BY DART AEROSPACE LTD
 THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD

w/o 146023

2m 16/05/06



D4150-1 ARM

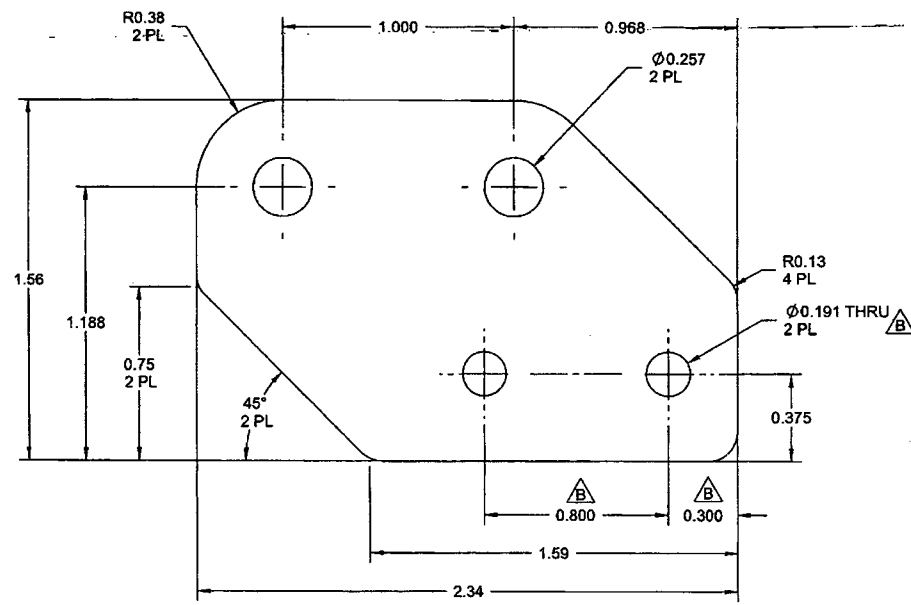


RELEASED
2010-07-16
MP

NOTES:

- 1) MATERIAL: 303/304/316 STAINLESS STEEL BAR PER ASTM A582 OR ASTM A276
REF DART SPEC M304B OR M303B
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.60 lbs

DESIGN		DART AEROSPACE LTD	
DRAWN	<i>[Signature]</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D4150	SHEET 2 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	ATTACHMENT ARM ASSY	NTS
DATE	10.07.08	COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



D4150-3 ARM PLATE

RELEASED
2010-07-16

NOTES:

- 1) MATERIAL: 303/304/316 STAINLESS STEEL 0.125" THICK SHEET ANNEALED 2B FINISH, PER MIL-S-5059 OR AMS 5513/5524 OR ASTM A240 OR ASME SA240 REF DART SPEC M304S11GA OR M303S11GA
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.10 lbs

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		D4150	SHEET 3 OF 3
APPROVED		TITLE	SCALE
DE APPR.		ATTACHMENT ARM ASSY	NTS
DATE	10.07.08	COPYRIGHT © 2010 BY DART AEROSPACE LTD	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO32646

Purchase Order Date 6/8/2016

PO Print Date 6/8/2016

Page Number 9 of 12

Order From :
TPI INDUSTRIES INC.
148 RUE GOODFELLOW
DELSON, QUEBEC J5B 1V4
CANADA

VC-TPI001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 450-633-0484

Ship To Contact
Ship To Phone
Ship Via:
Ship Acct:

Buyer
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB Destination-Collect

						Line Total:	\$37.80
22	D3405-043F	Lug Assembly	6/22/2016 Yes 6/22/2016	8.00 Each	✓	\$9.45	\$75.60
CUT AS PER DWG D3405 REV. B B145741 MATERIAL 304 SHEET 11GA						Line Total:	\$75.60
23	D3405-043F	Lug Assembly	6/22/2016 Yes 6/22/2016	8.00 Each	✓	\$9.45	\$75.60
CUT AS PER DWG D3405 REV. B B145740 MATERIAL 304 SHEET 11GA						Line Total:	\$75.60
24	D4150-3P	Arm Plate	6/22/2016 Yes 6/22/2016	24.00 Each	○	\$5.00	\$120.00
CUT AS PER DWG D4150 REV. B B146023 MATERIAL 304 SHEET 11GA							

Note:

6/8/2016

8016-6-21

T.P.I. INDUSTRIES INC.

148 GOODFELLOW
DELSON, QUÉBEC J5B 1V4
CANADA
Tel: (450) 633-0484
Fax: (450) 633-0879

Packing Slip

Packing Slip No.: 7618
Date: 2016-06-17
Page: 1

Sold to: Dart Aerospace Chantal Lavoie 1270 Aberdeen Hawkesbury, Ontario K6A 1K7 Canada	Ship to: Dart Aerospace Chantal Lavoie 1270 Aberdeen Hawkesbury, Ontario K6A 1K7 Canada
Order No.: 32646	Sold By: JONATHAN LESSARD
Shipped By:	Ship Date:
Tracking No.:	

Item No.	Unit	Description	Quantity
d3405-1	Chaque	d3405-1	24
d3405-3	Chaque	d3405-3	20
d3912-5	Chaque	d3912-5 eyebolt plate	24
d4150-3	Chaque	d4150-3 arm plate	24
d4149-1	Chaque	d4149-1 crosstube lug plate aft	32
d2581	Chaque	d2581 mounting bracket	60
d4151-1	Chaque	d4151-1 lower hardpoint plate	10
d4151-3	Chaque	d4151-3 upper hardpoint plate	10

Spille-le-21

Comment: Net / 30 from date of invoice 2% svc. chg. on invoices over 30 days

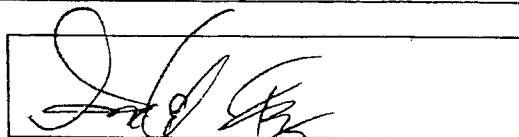
TPI Waterjet cutting follow up sheet

WC100127

machine hours	1162h
diamond hours	112h
mixing tube hours	0h
TAJ calibration	13-06-2016

customer po	part #	Qty	lot #	date done	cut by	quality spot check	Note
dart 32646	D3405-1	24	see mill test	14-06-2016	GR	Jonathan Lessard Gabriel Rioux	
dart 32646	D3405-3	20	see mill test	14-06-2016	GR	Jonathan Lessard Gabriel Rioux	
dart 32646	D3912-5	24	see mill test	14-06-2016	GR	Jonathan Lessard Gabriel Rioux	
dart 32646	D4150-3	24	see mill test	14-06-2016	GR	Jonathan Lessard Gabriel Rioux	
dart 32646	D4149-1	32	see mill test	14-06-2016	GR	Jonathan Lessard Gabriel Rioux	test approve by Eric Downing change hole size of .252 to .25
dart 32646	D2581	60	see mill test	15-06-2016	GR	Jonathan Lessard Gabriel Rioux	
dart 32646	D4151-1	10	see mill test	15-06-2016	GR	Jonathan Lessard Gabriel Rioux	test approve by Eric Downing change hole size of .252 to .25
dart 32646	D4151-3	10	see mill test	15-06-2016	GR	Jonathan Lessard Gabriel Rioux	change hole size of .252 to .25

Opérateur



Superviseur

